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PROCESSOR SPECIFICATION

FOR CHIP REPRODUCTION OF 4 x 5 CHIPS

This specification covers general requirements and performance characteristics for the photographic processing machine to support the Chip Format Printer.

The following document forms a part of this proposal as specified herein.

ASA PH 4.8-1958 American Standard Method for determining the thiosulfate content of black-white photographic film and plates.

STATINTL

Write-up prepared by [redacted] for an incorporated printer-processor (Mod II) for 4x5 chips.

This processor shall be a device for accepting and automatically processing 5" wide black and white film chips which are delivered to the processor as follows:

By continuous belt or similar method of transfer, one sheet at a time of cut sheet film 5" x 4" wide.

The film support base may be any current standard; that is, "thin" or "thick" in the 2.5 to 8.25 mil range. At the output station the developer unit shall take the processed cut sheet film and automatically transport it through the development solutions, fix, wash and dry cycle while assuming a high degree of reliability and film quality. The equipment shall be operable within a room with normal levels of illumination.

The equipment shall consist of the required and basic assemblies necessary to satisfactorily perform the tasks and shall consist of, but not be limited to, the following: loading assembly, feed and transport assembly, processing assembly, temperature control assembly, drying assembly, drying output assembly.

Materials used in the construction of the processing machine shall be of corrosion resistive type or suitably processed to resist corrosion. Use of the similar metals shall be avoided wherever possible or treated if use is unavoidable. Materials which are not nutrient for fungus shall be used.

The detailed mechanical, chemical, and electrical design of this equipment shall be accomplished subject to the requirements of this specification and to the extent considered necessary to obtain the desired performance. Any item part or unit considered necessary for proper operation per the requirements herein shall be supplied even though that item part or unit may not be specifically described or requested in this specification.

The unit shall be on line and capable of continuous duty and shall be capable of processing (4 x 5) cut film chips delivered to it at the minimum rate of one chip each 4-1/2 seconds. The unit shall also be capable of handling single sheets with longer random inputs during an eight hour period. (13 chips/minute)

The film to be processed shall be black and white material of any of the following types:

E. K. - 8430 and 5427

Provisions for attaching the cut sheet drive to the processor loading assembly and for setting individual sheets into the processor at a proper rate shall be furnished.

The automatic feed and transport mechanism shall be designed to handle the specified cut films while avoiding undue mechanical stresses and/or injury to the film surface images. The feed and/or transport method shall not require an attached loaded or a manual threading procedure.

The sensitometric characteristics of machine processed film is essentially uniform to those characteristics reported by the film manufacturer; that is, as regards contrast, gamma, maximum fog density difference, resolution effects, etc.

In a diffuse density 0.80 to 1.20 above base density, there shall be no more than 0.05 diffuse density variation along the length and across the width of the film.

The machine processed film shall meet ASA requirements of contained sodium thiosulfate for archival storage.

The processing equipment shall cause no streaking, scratches, or abrasions on the surfaces of the processed film. Each surface of the processed film shall be clean and free of stains, water spots, dust, foreign materials or chemical residues.

The equipment shall be designed so that it can be easily operated. All operating controls shall be designed to reduce the possibility of the human error. All parts shall be as accessible as possible for ease of maintenance.

The inspection and testing of equipment shall be as follows:

A) Preacceptance tests and inspections.
B) Acceptance testing.

A. Preacceptance Testing and Inspection - Preacceptance testing is for determining the readiness of the equipment for form and compliance within the required specifications. These tests shall include operation of the equipment under end use conditions and shall demonstrate at least the following:

1. Compliance with applicable specifications
2. Conformance to drawings
3. Electrical continuity
4. Functional characteristics
5. Performance
6. Sound safety and human engineering practices
7. Sound levels
8. Adequate lubrication.

B. Acceptance Testing - The acceptance testing shall be conducted by the procuring activity at a facility designated by the procuring activity, by the contractor's representative (s) present. Any deviation of the specification requirements occurring during the acceptance tests shall be corrected by the contractor and the equipment operated for a sufficient period to demonstrate the adequacy of the corrections.

The equipment shall meet the performance requirements of this specification as demonstrated by the following tests:

1. Sensitometric Tests - At least every tenth cut sheet shall have a calibrated step wedge sensitometric exposure made thereon. These exposures will be processed under standard conditions for this equipment and the data obtained used to show conformance with this specification.

2. Tests for uniformity of density - The roll and sheet films shall be uniformly exposed so that a developed density in the 0.80 to 1.20 range results when the film is machine processed. The uniformity of density shall be rated across the width of the density film in five places at approximately equal spacing and within about 1/8" of each edge. Readings should be repeated every tenth cut sheet of film for a minimum of five consecutive sheets. Values for a four hour run shall conform to the requirements of this specification.

3. Residual thiosulfate content - Samples shall be taken from the end of each 1/100 sheet of cut film and tested in accordance with the specification: PH4.8-1958 ASA method for determining the thiosulfate content of processed black and white photographic films and plates.

4. Visual inspection of processed film - The processed film shall be visually inspected for streaking, abrasions, scratches, stains water spots, dust, foreign material and chemical residues to insure conformance to this specification.

5. Film Chips (4 x 5) shall be fed to the processor at the rate of one each 4-1/2 seconds to insure the operation rate is correct. Operationally, no jamming or degradation of any of the requirements of this specification shall occur.

Failure of the equipment to meet any one of the performance requirements shall be cause for non-acceptance.